Older radio terminals remain premier choice for medium range connections

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TINKER AIR FORCE BASE, Okla. — Duty in the field is a way of life for reservists of the 35th Combat Communications Squadron, and the newest addition to their inventory of equipment ensures that way of life continues.

The AN/TRC-170 Radio Terminal Set is an air-to-ground transportable troposcatter microwave radio terminal. These terminals provide secure digital trunking between major nodes of a communications network. TRC-170 links might carry dedicated traffic to include analog and digital channels, point-to-point subscriber circuits, facsimile circuits and teletype circuits.

The AN/TRC-170 can remote the nodes from approximately 100 to 150 miles. To achieve this connection, "TRACs," as they're known, must use a software program to determine the path profile. Parameters such as path length, path profile (hills, mountains, obstacles), mission data rate, transmit power, receive diversity and atmospheric conditions will affect the length of the supported mission.

Courtesy photo

Tech. Sgt. Michael Meek checks the frequency of the incoming voltage on the TRC-170.

Normally the path profiles will be determined by a unit's engineering section or communications engineering officer, according to Tech. Sgt. Michael Meek, satellite and wideband technician. "However, because reserve combat communication units do not have overhead like engineering sections or communications engineers, it's up to the equipment team chiefs to develop the mission plan."

Since the equipment's arrival, the unit has had the opportunity on several occasions to set it up and use it during field exercises.

During a typical weekend training mission, reservists convoy their equipment to the site, set up the dish antennas and make their links between nodes. People assigned to operate this equipment include satellite, wideband and telemetry specialists and the power production specialists who set up and maintain the unit's power generator sets.

"The Power Pro guys are critical to our mission, and we simply wouldn't be able to operate without them on the crews," said Sergeant Meek.

The 35th Combat Communications Squadron is one of only two such units in the Air Force Reserve, the other being at Robins AFB, Ga. While these units are reserve organizations, and day-to-day activities are managed by the Air Force Reserve Command, during wartime or upon mobilization, they become Air Combat Command assets. Each reserve unit has a small cadre of full-time civilians, called Air Reserve Technicians, that ensure equipment, supplies, facilities, vehicles and procedures are available to the unit reservists when they arrive on their monthly drills. The ARTs keep the equipment in a ready state performing vital maintenance actions and upgrades as needed during the month.

While the reserve units are reequipping with newer state-of-the-art systems, systems such as the TRACs have no replacement. The TRACs are unique in the arena of tactical communication systems, which is a world where the equipment suites change constantly and the TRACs are fairly old by today's standards.

"This may be old equipment, but the TRACs are very robust and are still the premier choice for those medium range connections," said Lt. Col. Pete Peterson, 35th CBCS commander.